Show me the money! Income inequality and segregation in UK cities

DR JENNI CAUVAIN

WITH GAVIN LONG, TIM WHITELEY AND ETIENNE FARCOT

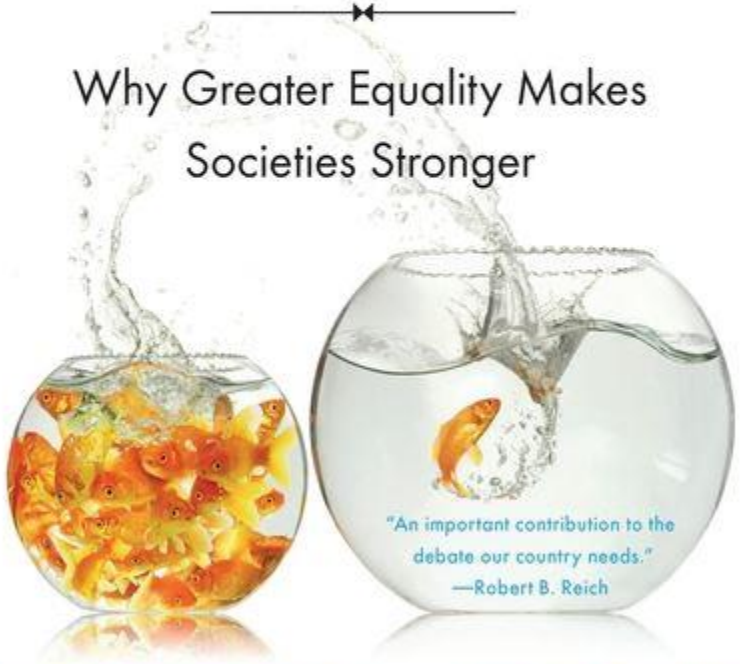
Interdisciplinary team: urban sociology, GIS & mathematical sciences

Background

INTERNATIONAL BESTSELLER

THE SPIRIT LEVEL

Why Greater Equality Makes Societies Stronger



RICHARD WILKINSON and KATE PICKETT

Foreword by Robert B. Reich

INEQUALITY AND THE

1%

Danny Dorling

INTERNATIONAL BESTSELLER

CAPITAL

in the Twenty-First Century

THOMAS PIKETTY

TRANSLATED BY ARTHUR GOLDHAMMER

Cavanaugh & Breau (2018) in a systematic review of 'geographies of inequality research' show that since 2007/8, no increase in publications focussed at urban & n'hood level, whereas substantial increase in national & regional accounts

Gini and segregation in cities – what do we know?

- Cities often break away from their national contexts: large cities are more unequal than their "host nations"
- US - income inequality POSITIVELY CORRELATED with segregation (Reardon & Bischoff 2011)
- A global trend? Increased national income inequality leads to urban segregation "almost everywhere in the world" (Tammaru et al 2020, 2021)
- OECD 2018 data shows the richest, followed by the very poorest, are the most segregated - Segregation follows a *U-curve*

Research questions

NB Most segregation studies focus on segregation of poor households from non-poor households

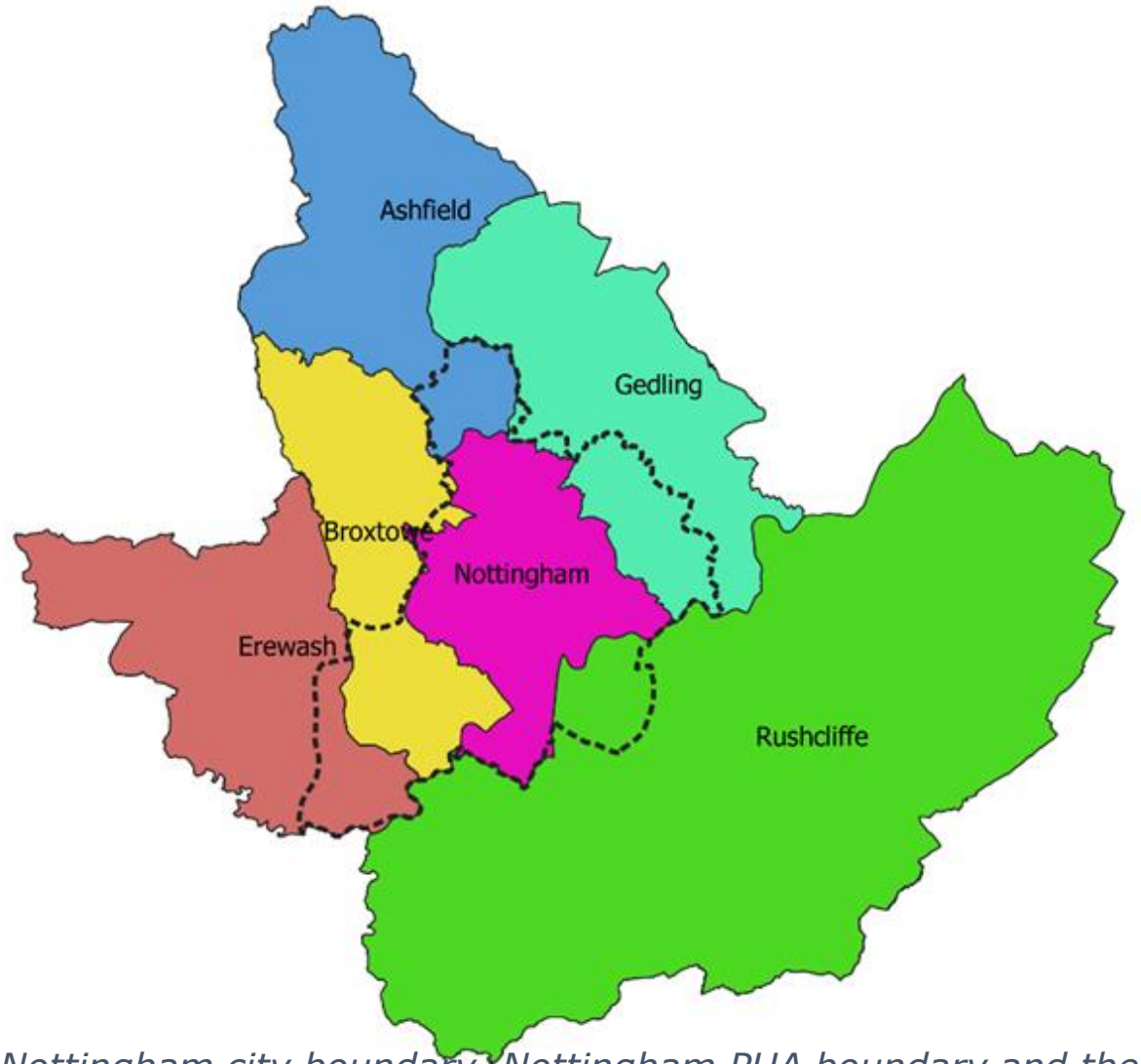
1. What is the relationship between **income inequality and segregation (of high income households from low income households)**?

2. Which group is more segregated in the UK (high or low incomes)?

3. What does the Gini tell us about "sustainable" cities and neighbourhoods'?

Methods & research design

- Gini; Index of Dissimilarity (Di); Interaction Index (Massey & Denton 1988)
- Sample: core cities + regional comparators
- Detailed case study of Nottingham conurbation



Nottingham city boundary, Nottingham PUA boundary and the five suburban district boundaries that intersect the Nottingham PUA. Contains National Statistics data © Crown copyright and database right 2012

_BIRMINGHAM
_BRISTOL
_CARDIFF
~~_GLASGOW~~
_LEEDS
_LIVERPOOL
_MANCHESTER
_NEWCASTLE
_NOTTINGHAM
_SHEFFIELD

+ Derby
+ Leicester
+ Cambridge
+ Winchester
+ Southampton

https://www.corecities.com/cities

Office for National Statistics (GB) | https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhc

Small area model-based income estimates, England and Wales: financial year ending 2016

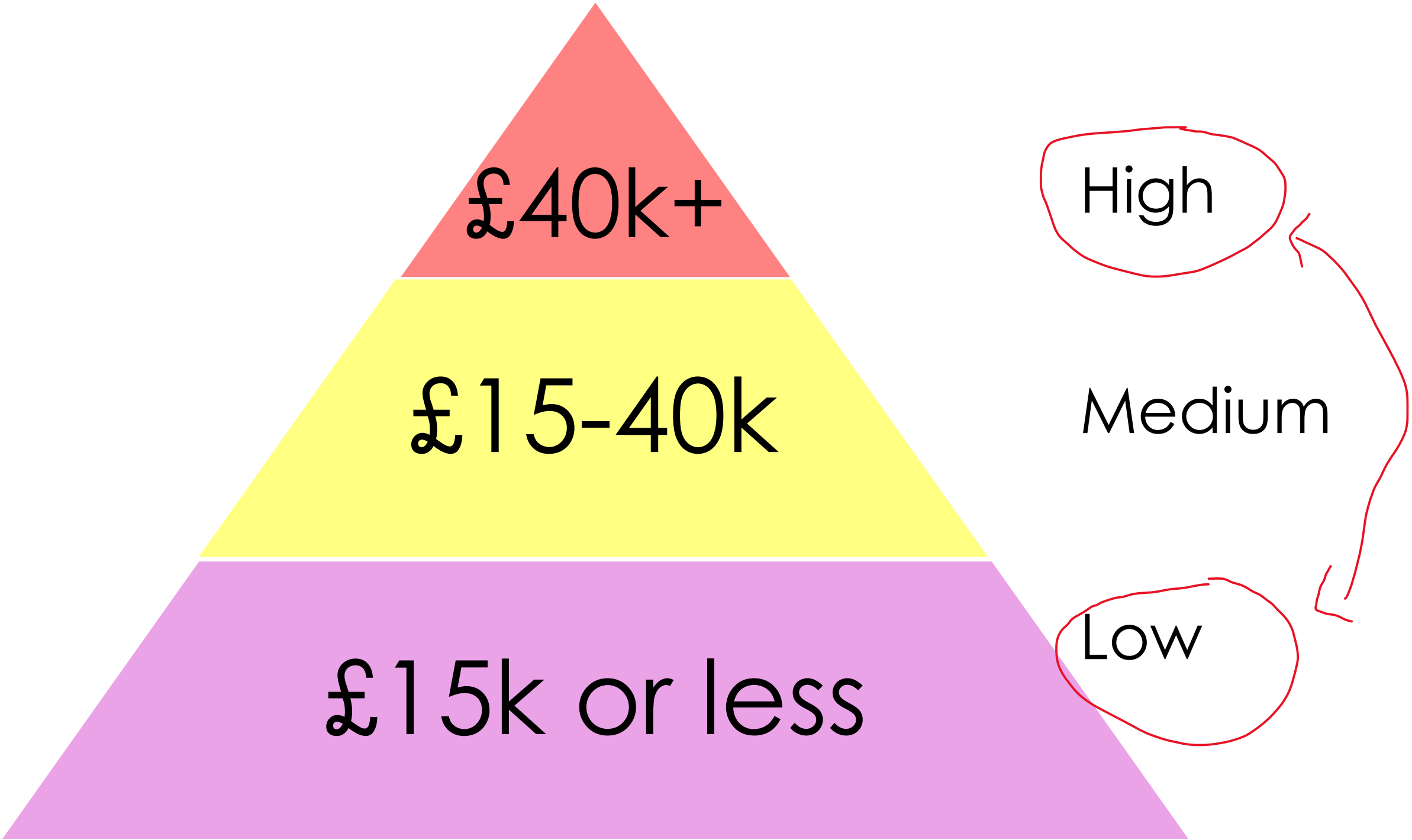
Small area model-based income estimates covering middle layer super output areas (MSOAs) in England and Wales.

This is the latest release. View previous releases

Contact:
Nigel Henretty

Release date:
25 April 2018

Next release:
To be announced


£40k+
£15-40k
£15k or less
High
Medium
Low

To calculate the Gini coefficient

WE FIT THE "INCOME BAND" DATA ON UNIFORM DISTRIBUTION AND SET THE UPPER BOUND AT £120K

(DATASET HIGHEST BAND IS £60K+)

Limitations

Experimental, modelled dataset – can't draw conclusions about poverty or standards of living

No historic data (can't examine trends/gentrification)

Modifiable areal unit problem

Lack of transparency of high incomes

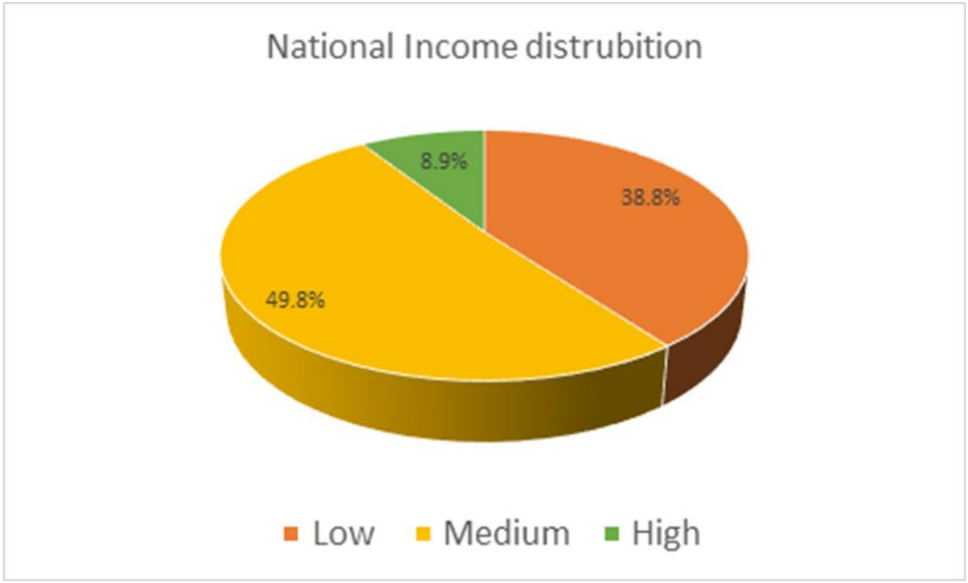
Results

Income distribution by LSOA (England and Wales)

IN 83 % OF LSOAS, MEDIUM INCOME IS DOMINANT

IN 1 % (CA 400 LSOAS) HIGH INCOME IS DOMINANT

78 % OF LSOAS, THE NUMBER OF LOW INCOME HOUSEHOLDS IS MORE THAN 20 PER CENT HIGHER THAN THE NUMBER OF HIGH INCOME HOUSEHOLDS



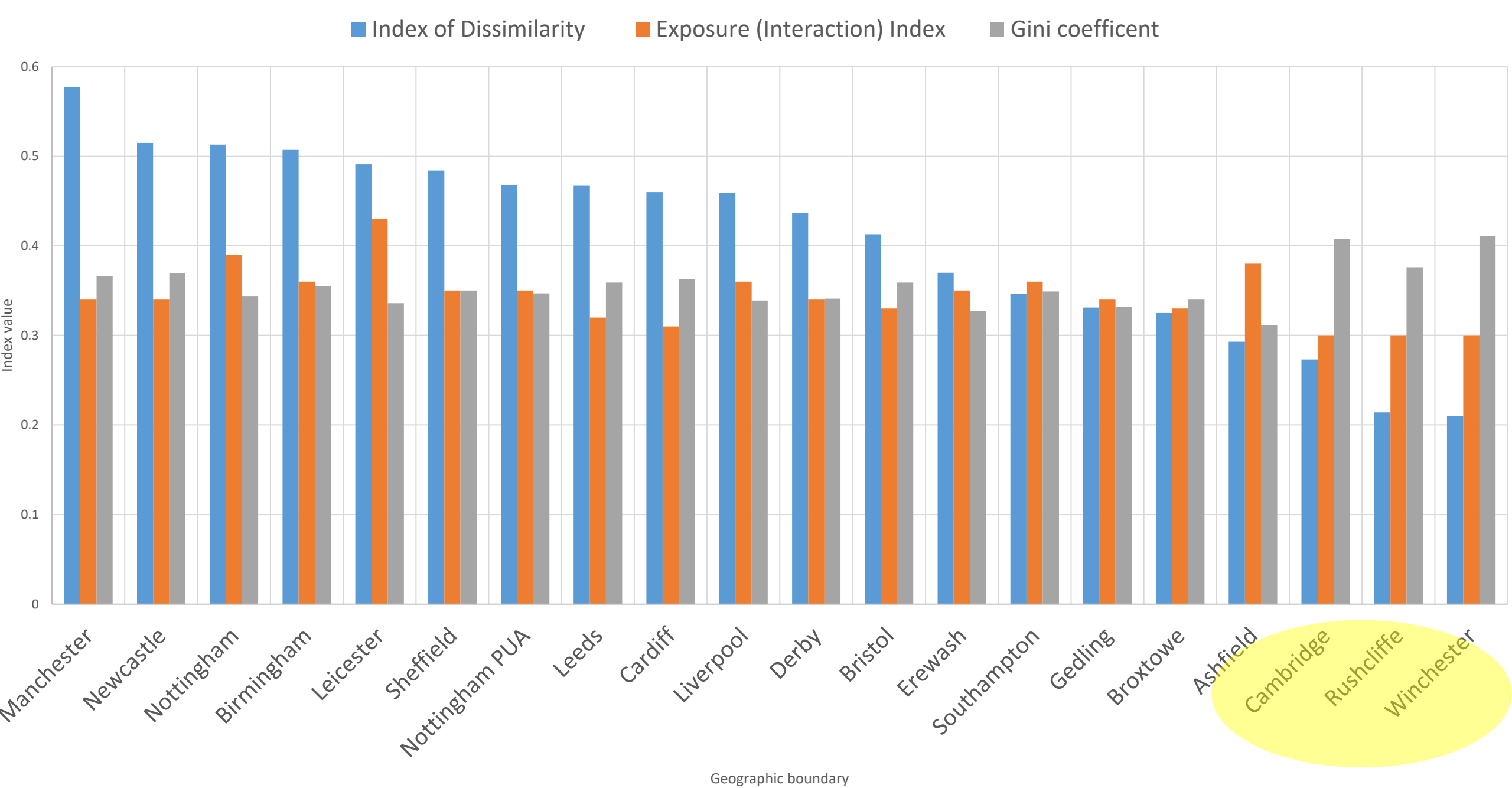
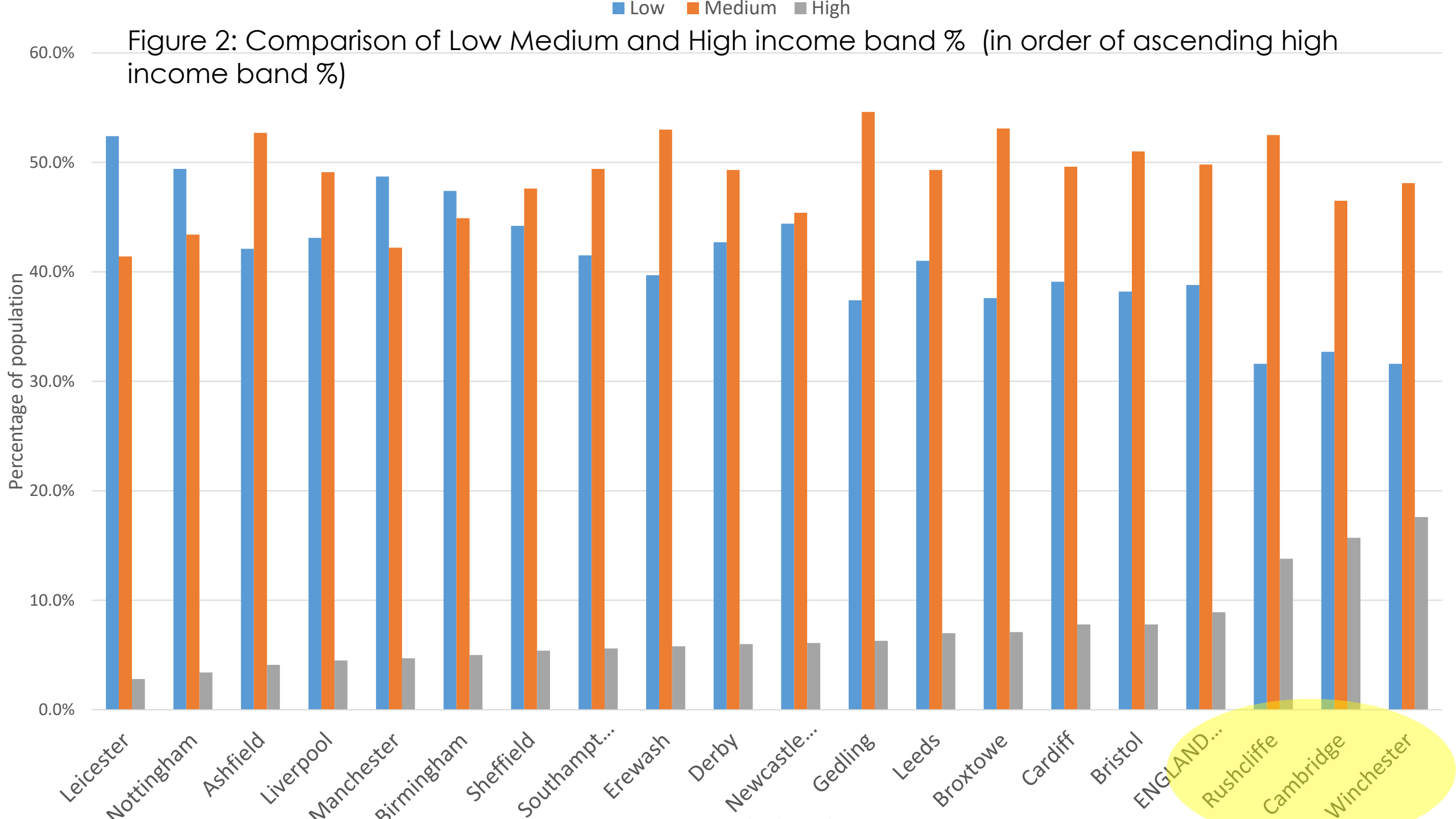
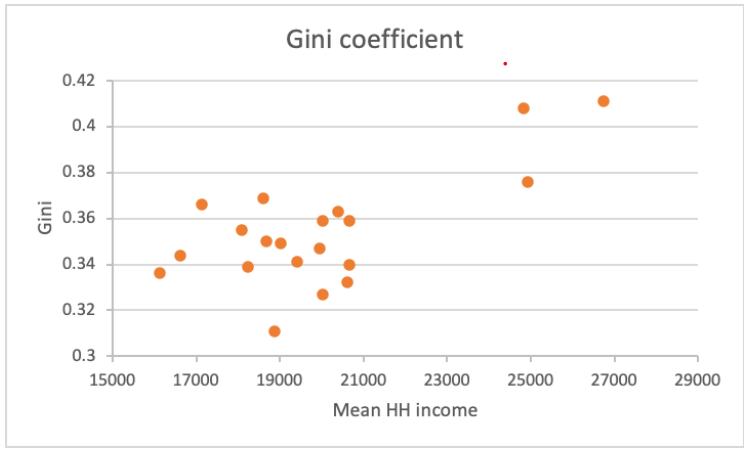
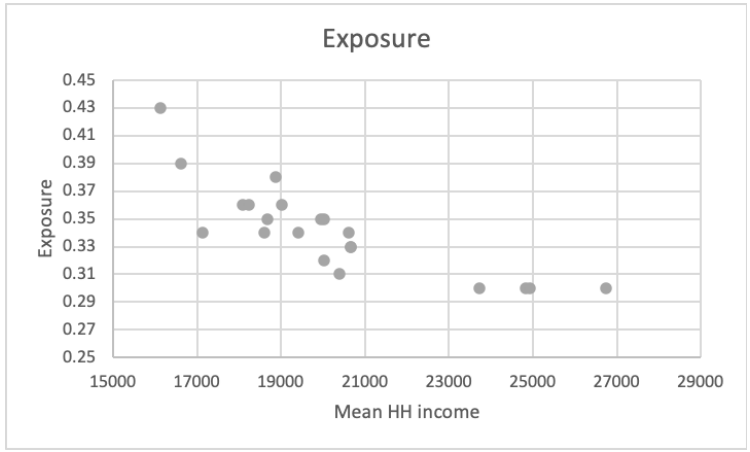


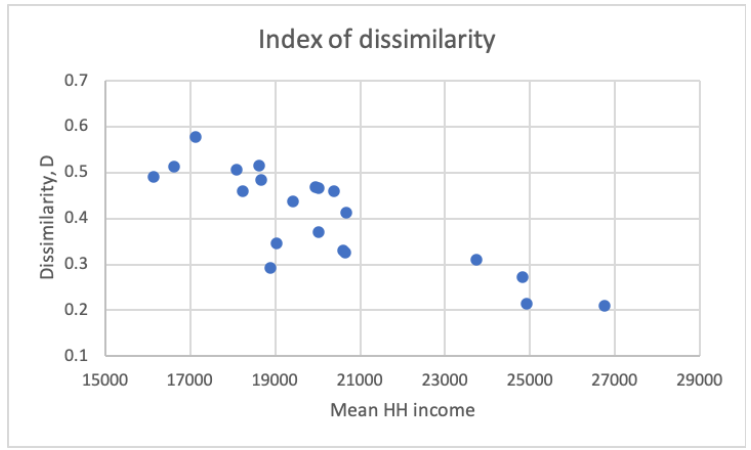
Figure 1: Gini coefficients, dissimilarity and interaction indices for case study areas of Nottingham and comparator UK cities (in descending order of Di value)

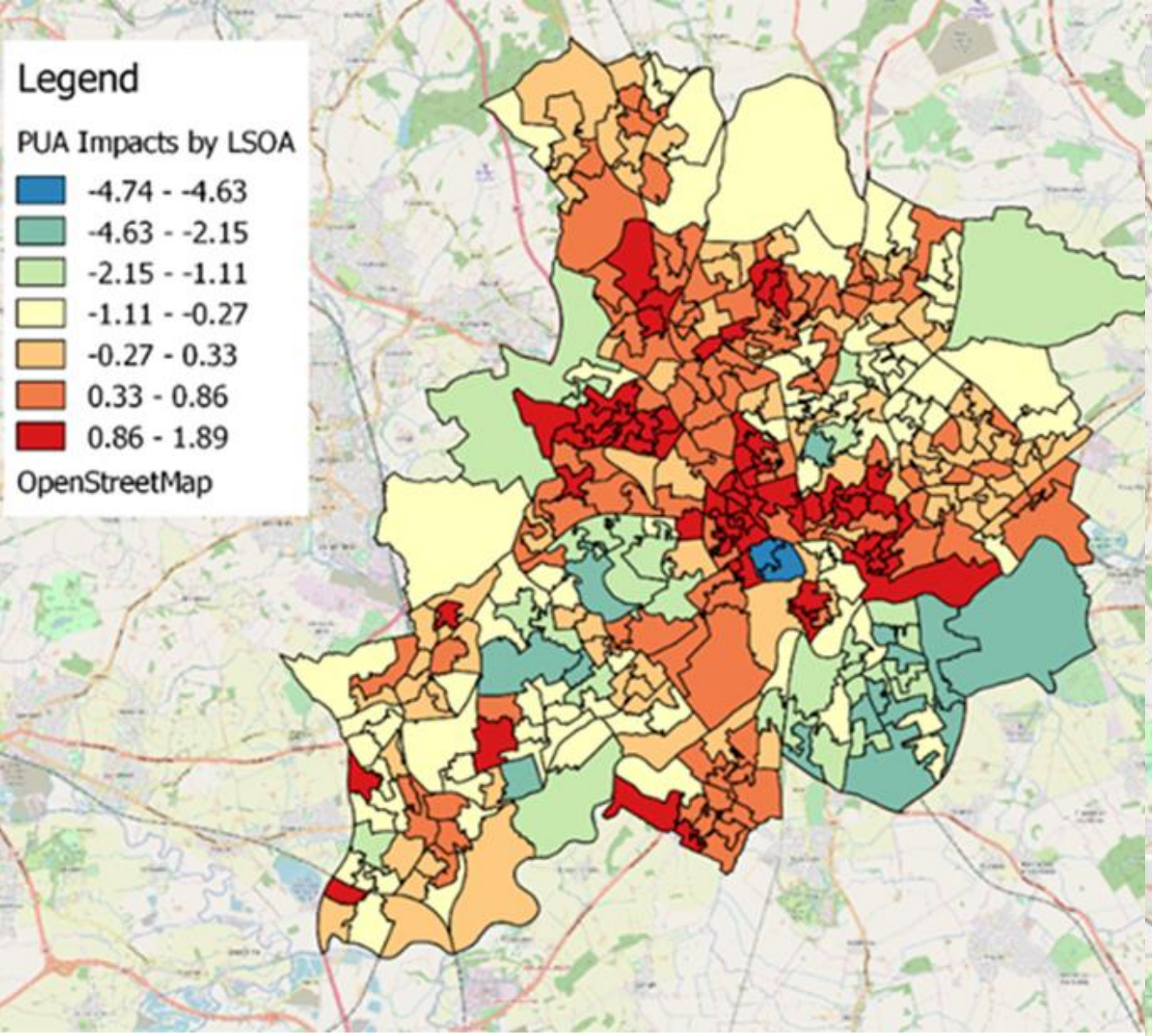
Figure 2: Comparison of Low Medium and High income band % (in order of ascending high income band %)

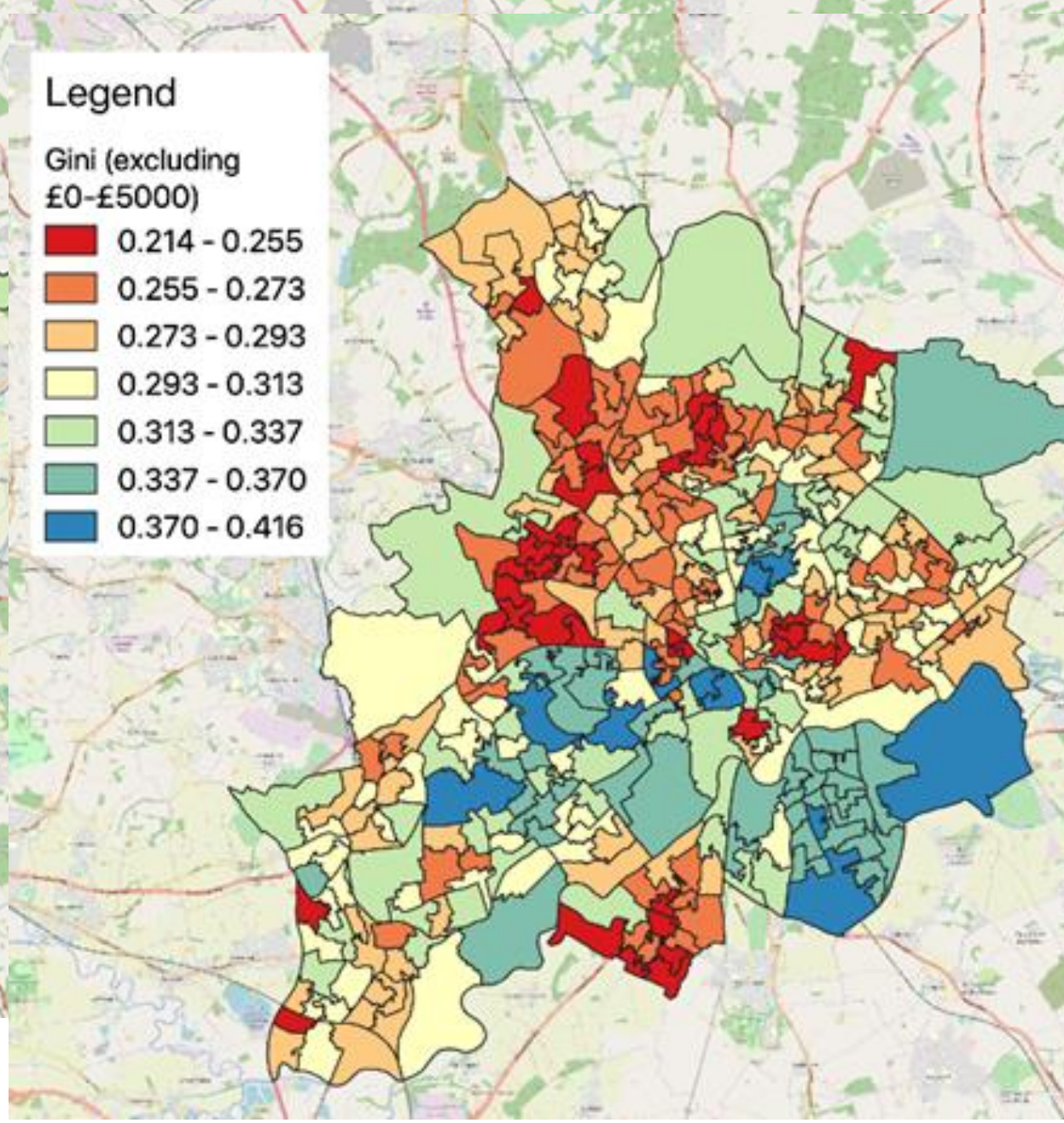



Gini coefficient
Gini
0.42
0.4
0.38
0.36
0.34
0.32
0.3
15000
17000
19000
21000
23000
25000
27000
29000
Mean HH income

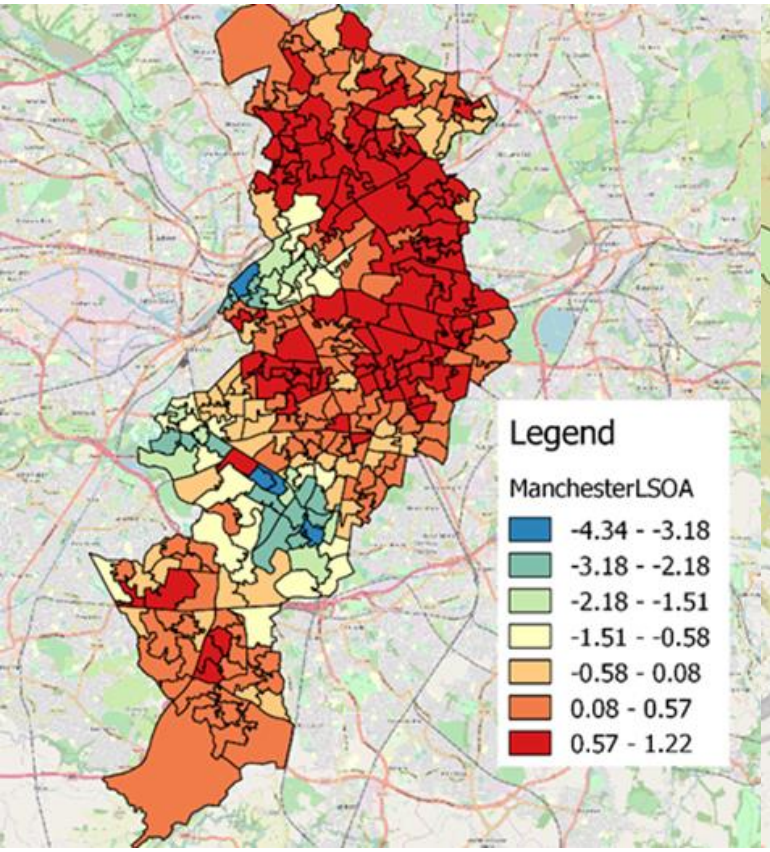

Exposure
Exposure
0.45
0.43
0.41
0.39
0.37
0.35
0.33
0.31
0.29
0.27
0.25
15000
17000
19000
21000
23000
25000
27000
29000
Mean HH income

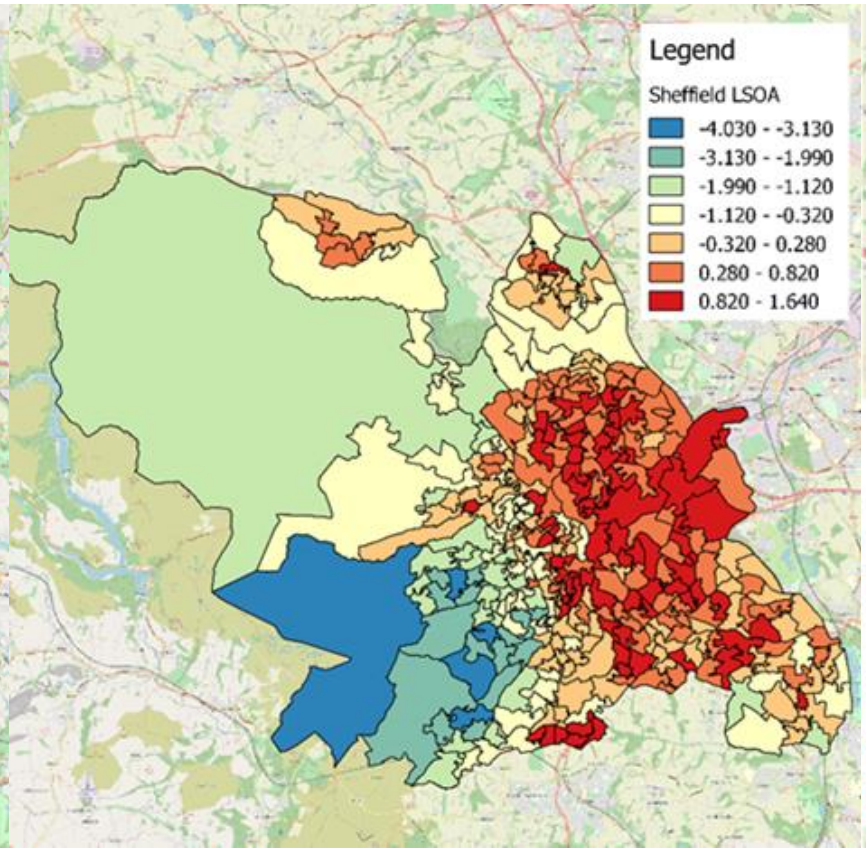

Index of dissimilarity
Dissimilarity, D
0.7
0.6
0.5
0.4
0.3
0.2
0.1
15000
17000
19000
21000
23000
25000
27000
29000
Mean HH income

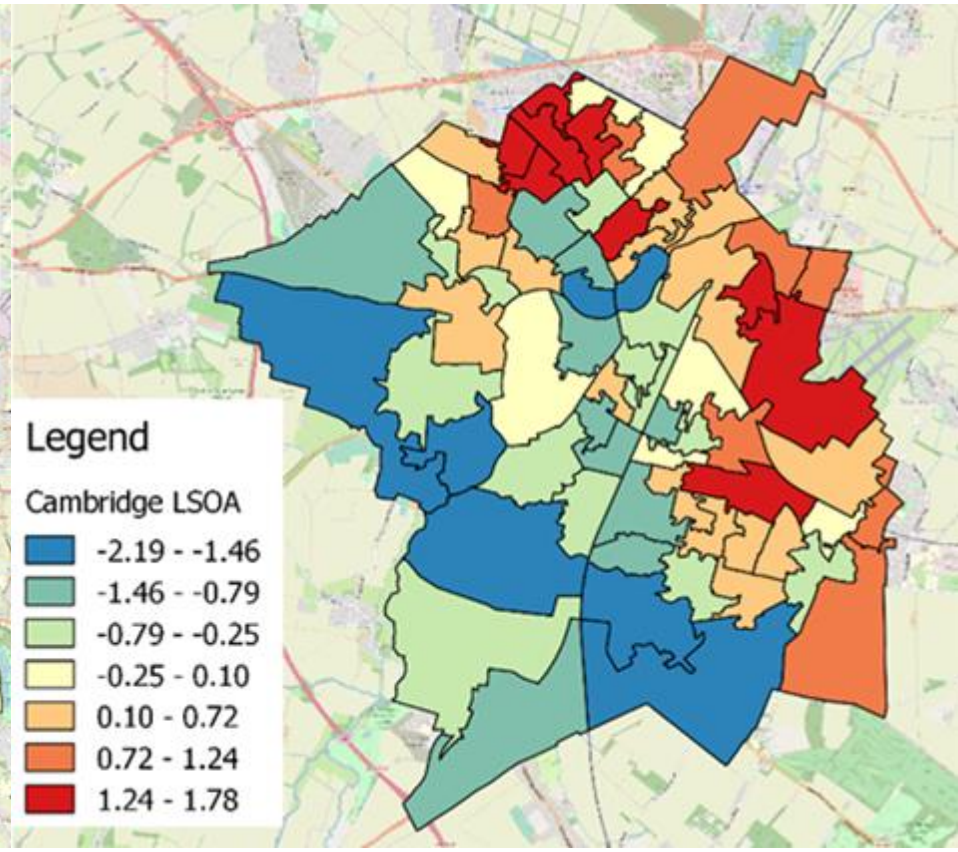




LSOA level impacts on the Dissimilarity index for the Nottingham PUA. Contains National Statistics data © Crown copyright and database right 2012. Backdrop mapping ©







LSOA level Di impact results for the cities of Manchester, Sheffield and Cambridge. Contains National Statistics data © Crown copyright and database right 2012. Backdrop mapping © OpenStreetMap contributors

Conclusions

- Data bias: high incomes are missing ("private") cf. numerous ways to measure low income, to a high level of geographical precision
  - *Most research on income inequality is likely to underestimate it*
- High incomes have the biggest impact on segregation (Di) and inequality (Gini) in the cities studied
  - *Nb student populations*
- Affluent cities are different: higher Gini but lower segregation and interaction indices ("pockets of affluence")
  - *Previous research overlooks income distributions?*
- High Gini LSOA = "mixed"; Low Gini LSOA = homogenous (almost always poor)
- In urban research, higher Gini is (very) tentatively "good news" – more suited as a measure of income mix (heterogeneity) rather than "inequality" (loaded term) – chimes with Glaeser et al, 2009 "inclusive economy"

Next steps

- Revisions underway
- Advocate for the utility of "**unevenness of household income**" in urban studies (pockets of affluence as well as deprivation)
- Applications for urban sustainability – particularly interdisciplinary synergies (NB new evidence of excess deaths linked to declining incomes, not deprivation, during austerity Darlington-Pollock, Simpson & Green 2021)

Thank you!

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